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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,704	07/13/2006	James Martin	14.0237-PCT-US	3099
7590	07/26/2007			
WesternGeco Intellectual Property Department PO Box 2469 Houston, TX 77252-2469			EXAMINER HUGHES, DEANDRA M	
			ART UNIT 3663	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,704	<b>Applicant(s)</b> MARTIN ET AL.	
	<b>Examiner</b> Deandra M. Hughes	<b>Art Unit</b> 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/16/07; 1/17/06</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statements (IDSs) filed on 1/16/07 and 1/17/07 have been considered by the examiner and are found to be cumulative to the art of record.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5, 10-13, 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Maxwell (US 6,883,638 filed Mar. 16, 2000).

With regard to claims 1 and 10, Maxwell discloses an apparatus for processing seismic data (note the title) representative of the acceleration wavefield (fig. 12, #110) thereby to obtain information about the earth's subsurface (the gravitational force) direct from the seismic data representative of the acceleration wavefield (gravity is acceleration).

Note also that in figure 9B, the note the absence of conversion to velocity in processing of the data of the accelerometer (col. 10, line 62-67).

With regard to claims 11 and 17-19, the controller (#110) is programmable storage medium.

With regard to claims 5 and 12, col. 3, lines 25-30 disclose that the point source and the receiver are spaced apart.

With regard to claims 6 and 13, the Examiner considers the disclosure of "most beneath the Earth's surface" to be at the Earth's surface (col. 15, line 37).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell in view of Seth (US 6,883,638 published 9/19/02).

Maxwell does not specifically disclose attenuating high frequency noise in the seismic data. However, Seth teaches filtering high frequency noise in accelerometers (paragraph [0019]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to attenuate high frequency noise in the accelerometer for the advantage of improved seismic imaging.

6. Claims 7-9 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell in view of VanBarren (US 2006/0262645 filed Jan 23, 2004).

Maxwell does not specifically disclose the claimed source/receiver arrangements. However, VanBarren teaches a multiplicity of water column/borehole source/receiver arrangements, including the claimed arrangements (entire patent). It would have been

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obvious to one of ordinary skill in the art at the time the invention was made to use the arrangements as disclosed by VanBarren for the advantage of acquiring seismic data.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell in view of Seth as applied to claim 2 above and further in view of Applicant's admitted prior art (pg. 1, 3<sup>rd</sup> paragraph).

Maxwell in view of Seth does not specifically disclose attenuating frequencies over 100Hz. However, the Applicant admits that typically high resolution frequency ranges are 5-80 Hz. It would have been obvious to one of ordinary skill in the art at the time the invention was made to attenuate signals in the 100Hz range for the advantage of removing the signals that do not contribute to improved resolution of the image.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M. Hughes whose telephone number is 571-272-6982. The examiner can normally be reached on M-F, 8:30am-5:00pm.

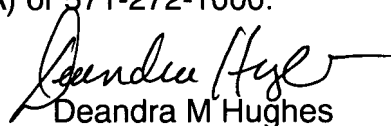
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Deandra Hughes", with a stylized flourish at the end.

Deandra M Hughes  
Primary Examiner  
Art Unit 3663

DEANDRA M. HUGHES  
PRIMARY EXAMINER